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Amendments to the Claims

Claim 1-62 (Cancelled).

Claim 63 (New): A cathode assembly comprising:

a plurality of silicon-comprising emitter tips, at least one of the emitter tips being substantially conical and comprising a tip portion supported by a frustrum portion, the tip and frustrum portions including sidewalls; and

a coating over the tip portion, the coating not being along the frustrum portion sidewalls, wherein the coating comprises a first material having a lower work function than silicon.

Claim 64 (New): The assembly of claim 63 wherein the tip portion terminates in a pointed apex.

Claim 65 (New): The assembly of claim 63 wherein the at least one of the emitter tips comprises conductively doped polysilicon.

Claim 66 (New): The assembly of claim 65 wherein the frustrum portion comprises conductively doped polysilicon.

Claim 67 (New): The assembly of claim 65 wherein the tip portion comprises conductively doped polysilicon.

Claim 68 (New): The assembly of claim 63 wherein the at least one of the emitter tips consists essentially of conductively doped polysilicon.

Claim 69 (New): The assembly of claim 63 wherein the at least one of the emitter tips comprises conductively doped silicon.

Claim 70 (New): The assembly of claim 69 wherein the frustrum portion comprises conductively doped silicon.

Claim 71 (New): The assembly of claim 69 wherein the tip portion comprises conductively doped silicon.

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cont.*  
Claim 72 (New): The assembly of claim 63 wherein the at least one of the emitter tips consists essentially of conductively doped silicon.

Claim 73 (New): The assembly of claim 63 wherein the first material comprises diamond.

Claim 74 (New): The assembly of claim 63 wherein the first material comprises boron nitride.

Claim 75 (New): The assembly of claim 63 wherein the first material comprises cesium.

Claim 76 (New): The assembly of claim 63 further comprising a second material along the frustrum portion sidewall, the second material being different than the coating.

Claim 77 (New): The assembly of claim 63 wherein the coating is along the tip portion sidewalls.

Claim 78 (New): A cathode assembly comprising:

a substrate having a plurality of substantially conical emitter tips thereover, each of the conical emitter tips terminating in a pointed apex and having a tip portion sidewall and a frustrum portion sidewall; and

material over the substrate and between at least two of the emitter tips, the material having an upper surface and edges contacting the frustrum portion sidewall without contacting the tip portion sidewall, wherein the entirety of the upper surface is exposed.

Claim 79 (New): The assembly of claim 78 wherein the material comprises silicon dioxide.

Claim 80 (New): The assembly of claim 78 wherein the emitter tips comprise silicon.

Claim 81 (New): The assembly of claim 80 wherein the emitter tips comprise conductively doped polysilicon.

Claim 82 (New): The assembly of claim 80 wherein the emitter tips consist essentially of conductively doped polysilicon.

Claim 83 (New): The assembly of claim 80 wherein the emitter tips comprise conductively doped silicon.

Claim 84 (New): The assembly of claim 80 wherein the emitter tips consist essentially of conductively doped silicon.